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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PERKINS COIE LLP			KNOX, STEWART	
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SEATTLE, WA 98111-1247			3641	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/821,020	QUIMBY ET AL.	
	Examiner	Art Unit	
	Stewart T. Knox	3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 18-47 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: applicant must clarify the disclosure to explicitly state, with reference to the terms and phrases of the claim element, what structure, materials, or acts perform “means for controllably cooling the gas,” “means for heating an inner surface of the detonation chamber,” “means for heating the inner surface,” “first heating means,” and “second heating means” recited in the claim elements and equivalents thereof.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “second heating means for heating the inner surface” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

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drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 13, 14 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The means for heating an inner surface of the detonation chamber is recited in claim 14 as heating the expansion chamber. However, it is not clear how this is done since (a) the only heater shown heating the detonation chamber (figure 1 element 50) has no connection to the expansion chamber, and (b) the only heater shown heating the expansion chamber (42) has no connection to the detonation chamber. Further, they are shown as existing in separate modules, with only an exhaust manifold connecting to the expansion chamber itself.

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5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 4 is rejected for being unclear as to what the solids reactor is adapted to introduce.

As stated, it looks as if the reactor introduces an alkaline solid and a catalytic converter.

Appropriate correction is required.

7. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 recites the limitation "the first heating means" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan (6,354,181) in view of Gregg (6,431,094). Donovan discloses a system for rendering chemical weapons material less hazardous (col. 1 lines 22-28) comprising a detonation chamber (figure 5, element 21), an emission treater (23) wherein the emission treater is adapted to treat gas from the detonation of the chemical weapons material (col. 6 lines 13-22), yielding a substantially dry residual waste stream (from 24) and a treated gas suitable for venting to atmosphere. Donovan does not teach an expansion chamber or means for controllably cooling the gas.

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10. Gregg teaches an expansion chamber (figure 2, element 2) in fluid communication with the detonation chamber (3) and the emission treater (right side of figure 2) wherein the treater includes means for controllably cooling the gas (col. 3 lines 48-56, col. 4 lines 11-27) from the detonation without introducing a liquid into the gas. The expansion chamber is provided in fluid communication with the detonation chamber in order to provide the required volume for containment of the gas and heat within reasonable tolerances (col. 5 lines 23-44), and the means for cooling is provided to assure that the system operates within safety standards and that it complies with applicable air pollution control standards. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan to include an expansion chamber and a cooling system as taught by Gregg since such a modification would allow room for the gases to expand more naturally and would help to meet environmental standards for weapons disposal.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan and Gregg as applied to claim 1 above, and further in view of Donovan (6,705,242). Donovan and Gregg teach the claimed invention except for an antechamber. Donovan (6,705,242) teaches an explosive chamber sealing apparatus comprising an antechamber (11) that can be sealed from the inner chamber of the detonation chamber, including an air inlet and outlet (3) configured to flush gas in the antechamber (abstract) in order to prevent toxins from being released into the atmosphere. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan and Gregg to include the antechamber sealing apparatus of Donovan, since such a modification would provide the system with a sealed

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airtight chamber door in the event that toxins are released from combustion or explosion of munitions.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan and Gregg as applied to claim 1 above, and further in view of Lerner (5,607,654). Donovan and Gregg disclose the claimed invention except for a conduit for the introduction of alkaline powder into the gas being treated. Lerner teaches the use of dry alkali solids or powders being introduced into combusted gas in order to remove acidic compounds from the gas. Lerner shows this as lime (figure 2, element 51) in a spray-scrubber (52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan and Gregg to include the alkaline powder injection as taught by Lerner, since such a modification would allow for the de-acidification of the gases being treated and further their acceptability for release into the environment. See column 2, in particular lines 24-33.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan, Gregg, and Lerner as applied to claims 1 and 3 above, and further in view of Lamnevik (5,481,062). Donovan in combination with the others teaches the claimed invention except for the presence of a catalytic converter. Lamnevik teaches the presence of a catalytic converter in order to control the generation of harmful combustion products from explosives (col. 1 lines 46-60, claims). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan, Gregg, and Lerner with the catalytic converter of Lamnevik, since such a modification would provide the system with means to further ensure compliance with environmental standards and minimize risk to personnel.

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14. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being obvious over Donovan, Gregg, and Lerner as applied to claims 1, 3, and 4 above. Donovan in combination with the others teaches the claimed invention including an emission treater with a reactive solids conduit (Lerner, figure 2, element 51) configured to introduce an alkaline powder into the gas being treated. They do not teach a heated gas conduit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system as taught by Donovan, Gregg, and Lerner to have a temperature-regulating unit to modulate the gas temperature to an appropriate range for alkaline solids reaction since it was known in the art that heated gas can be used to regulate the temperature of an exhaust gas from a reaction.

15. In regards to the reaction temperatures of between 600° and 1200° F, it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat or otherwise control the temperature of the alkaline reaction in the above temperature range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

16. Claim 12 is rejected under 35 U.S.C. 103(a) as being obvious over Donovan and Gregg as applied to claim 1 above. The pulse limiter as described reads on a valve used to vary the size of an opening. It is well known in the art that many types of emission treaters can treat only a certain volume of gas at a time, and varying the size of an opening so that it is larger at a lower pressure and smaller at a higher pressure will ensure that the gas flow remains relatively constant. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the system of Donovan and Gregg with a valve as is known in the art since

such a modification would provide the system with means to ensure that the volume of air entering the emission treater remains relatively constant.

17. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable and obvious over Donovan and Gregg as applied to claim 1 above and further in view of Hot-Gas

Decontamination (IDS). Donovan and Gregg teach the claimed invention including Gregg teaching a means for heating an inner surface (figure 7, element 29) of the detonation chamber (3c) which, because it is contained within the expansion chamber, will necessarily heat the expansion chamber as well. The heating is done in order to effect a detonation of the weapon being neutralized. Donovan and Gregg do not teach a second heating means or an operating temperature range of 120°—300° F. Hot-Gas Decontamination teaches a second heating means for heating the inner surface to a higher decontamination temperature for use in periodically decontaminating the detonation chamber, in order that it may be sold or reused without contaminants instead of destroyed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan and Gregg with the decontamination heating means of Hot-Gas, since such a modification would allow the system to be cleaned, reused, and sold without destroying the chamber.

18. In regard to the operating temperature range of 120°—300° F, it would have been obvious to one of ordinary skill in the art at the time the invention was made to heat the inner wall of the detonation chamber to the range above, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

19. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being obvious over Donovan and Gregg as applied to claim 1 above and further in view of Hay (4,875,420). Donovan and Gregg disclose the claimed invention except for the system being composed of modules. Hay teaches that hazardous waste treatment systems can be divided into modular systems comprising detonation chambers, emission treaters, and expansion chambers in order to transport more easily to and from field locations. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan and Gregg to be modular as taught by Hay, since such a modification would allow the weapon destruction system to be easily transported and used in various locations.

20. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan and Gregg as applied to claim 1 above, and further in view of Hladun (4,320,709). Donovan and Gregg disclose the claimed invention including a charge of energetic material (16). They do not disclose the atmosphere having at least 25% oxygen by weight. Hladun teaches that it is known to enrich the atmosphere of a detonation chamber with oxygen in order to optimum combustion conditions (col. 2 lines 41-47, col. 4 lines 35-44), but does not specifically disclose the value of 25% by weight. It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the oxygen enrichment value equal to at least 25%, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

21. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Donovan and Gregg as applied to claim 1 above, and further in view of Voorhees (5,727,481). Donovan and Gregg teach the claimed invention except for a mechanical loader. Voorhees teaches a

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mechanical loader (figure 2, element 88) operatively associated with the detonation chamber and adapted to deliver the chemical weapons material to the detonation chamber, so that items may be easily loaded and ashes/debris may be easily removed after incineration (col. 5 lines 37-50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Donovan and Gregg to include a mechanical loader as taught by Voorhees, since such a modification would provide the system with an easy way to load and unload objects from the detonation chamber.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stewart T. Knox whose telephone number is (571) 272-8235. The examiner can normally be reached on Monday through Thursday, 8:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on (571) 272-6873. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

STK


MICHELLE CLEMENT
PRIMARY EXAMINER